

App. No.: 10/009555
Filed: October 26, 2001
Conf. No. 4606

Page 2 of 5

IN THE CLAIMS

1. (Currently Amended) A pushing, electric motor-operated wheelchair, a frame provided with a seat for a patient, at least one wheel journaled by said frame and driven by an electric motor carried by said frame, a bar handle extending upward from a rearward portion of said frame and having a cross piece of a double member structure consisting of a fixed member attached to and extending transversely across said frame and an external member disposed along ~~at least~~ at least a substantial portion of the length of an upper side portion of said fixed member and supported for limited movement relative thereto and to which an assistant applies a force to move said wheelchair; a detecting means interposed between said fixed member and said external member to detect control information based on an external force applied by the assistant to said external member to move said wheelchair, and a control for controlling said electric motor to produce assisting power commensurate with the control information detected by said detecting means.

2. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 1, wherein the detecting means detects relative displacement between the fixed member and the external member, and the control controls the electric motor to produce assisting power commensurate with the detected displacement.

3. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 2, wherein the displacement detecting means is disposed in the center, with respect to the wheelchair width, of at least one of the fixed member and the external member, and guides are provided on right and left sides of said displacement detecting means to restrict up and down movements and to permit forward and reverse movements of said external member relative to said fixed member.

4. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 2 wherein the displacement detecting means is disposed in the center, with respect to the wheelchair width, of at least one of the fixed member and the external member, and grip members are provided on right and left sides of said external member.

5. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 4, wherein the right and left grip members are positioned symmetrically apart from the longitudinal centerline of the wheelchair and sloping obliquely up inward to the center in the wheelchair width direction from right and left ends.

App. No.: 10/009555
Filed: October 26, 2001
Conf. No. 4606

Page 3 of 5

6. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 2 wherein the control controls the electric motor to move forward according to the magnitude of the relative displacement between the fixed member and the movable member caused by pressing the upper side portion of the bar handle, and controls the driving motor to move backward when a separately provided first operator is turned on.

7. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 2, wherein the control controls the electric motor to move forward or backward according to the magnitude of the relative displacement between the fixed member and the movable member of the bar handle, and controls said electric motor to stop irrespective of the value detected with the displacement detecting means when a separately provided second operator is turned on.

8. (Previously Amended) A pushing, ~~type of~~ electric motor-operated wheelchair according to claim 6 wherein operators selected from the group consisting of a reverse switch, a power switch, and a speed regulation device and displays selected from the group consisting of a power display, a display for indicating the necessity of charging, and an anomaly display are collectively disposed in the center, with respect to the wheelchair width of the external member of the bar handle.

9. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 1, wherein the detecting means comprises a load detecting means for detecting the magnitude of the load applied to the external member and the control controls the electrical motor so as to produce assist power commensurate with the detected load.

10. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 9, wherein the detecting means comprises a magnetostriction sensor for detecting the load and a magnetostriction sensor for compensating the output from the load-detecting magnetostriction sensor.

11. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 10, wherein the load-detecting magnetostriction sensor and the output-compensating magnetostriction sensor are disposed to face each other and a damping member is interposed between the two sensors.

12. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 10, wherein a load transmitting member for transmitting load to the load-detecting magnetostriction sensor is adjustably attached to the external member for adjustment of its position relative to the load-detecting magnetostriction sensor.

13. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 12, wherein an indicator displays the relative positions of the load transmitting member and the load-detecting magnetostriction sensor.

App. No.: 10/009555
Filed: October 26, 2001
Conf. No. 1606

Page 4 of 5

14. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 1, wherein the detecting means outputs control information based on the external force acting on the external member in a horizontal direction.

15. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 1, wherein the external member is provided with a handle cover disposed in the transverse center of the wheelchair, and further includes right and left grip portions extend respectively in right and left directions from said handle cover, a top surface of said handle cover comprises an operation panel portion, said operation panel portion having a depressed part at one side thereof forming a rotary switch placing portion and further including a rotary switch disposed in said rotary switch placing portion.

16. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 1, wherein the external member is provided with a handle cover disposed in the wheelchair width center, and right and left grip members extend respectively from right and left from said handle cover, a top surface of said handle cover is formed as an operation panel portion, a push switch mounted in a switch hole formed in said operation panel portion and projecting upward from said top surface of said operation panel portion, and a switch circumferential wall formed around said switch hole so as to surround said push switch and lying substantially flush with a top surface of said push switch.

17-23. (Cancelled)

24. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 7 wherein operators selected from the group consisting of a reverse switch, a power switch, and a speed regulation device and displays selected from the group consisting of a power display, a display for indicating the necessity of charging, and an anomaly display are collectively disposed in the center, with respect to the wheelchair width, of the external member of the bar handle.

25. (Previously Amended) A pushing, electric motor-operated wheelchair according to claim 15 wherein the rotary switch is provided with operation tongue portions projecting toward the grip member.

26. (Cancelled)